



**Aqua Solutions, Inc.**  
**6913 Highway 225**  
**Deer Park, TX, 77536**  
**281/479-2569**  
**Certificate of Analysis / QC Results**  
**Customer PO # :**

<b>Packaged Product:</b> 4190			
HYDROCHLORIC ACID 0.5 NORMAL NIST TRACEABLE SOLUTION			
Test	Target/UOM	Range	Result
Actual Normality	0.5000 EQ/L	0.4995 - 0.5005	0.5001
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>QCSP5: STANDARDIZATION OF AQUEOUS ACIDS</b>	YES METHOD		YES
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>N.I.S.T. Traceable to SRM 723 THAM</b>	YES YES		YES
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>PREPARED TO FORMULATION ON FILE</b>	YES YES		YES
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>SAMPLE COLLECTION &amp; HANDLING PER LAB040</b>	YES YES		YES
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>DATE OF SAMPLING FOR TEST PURPOSES</b>	MM/DD/YYYY MM/DD/YYYY		12/15/2023
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>AMBIENT TEMPERATURE DURING SAMPLING DEGC</b>	25.0 DEG C	10.0 - 35.0	22.0
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>DATE OF TESTING OF SAMPLE</b>	MM/DD/YYYY MM/DD/YYYY		12/15/2023
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		



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<b>AMBIENT TEST TEMPERATURE</b>	20.0	15.0 - 30.0	22.0
<b>DEG C</b>	<b>DEG C</b>		
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>APPEARANCE AND COLOR</b>	<b>CLEAR LIQUID</b>		<b>PASS</b>
	<b>APPEARANCE</b>		
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>INSTRUMENTS USED DURING PREPARATION</b>	<b>INSTRUMENT</b>		<b>T-193,T-161,BID-3902,PID-M91</b>
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>EXPIRATION DATE</b>	<b>MM/DD/YY</b>		<b>12/30/25</b>
	<b>MM/DD/YYYY</b>		
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>Actual Density</b>	<b>1.00719</b>	<b>1.00714 - 1.00723</b>	<b>1.00721</b>
	<b>GM/ML</b>		
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>SHELF LIFE OF PRODUCT</b>	<b>2 YEARS</b>		<b>2 YEARS</b>
	<b>TIME</b>		
Sample ID			
Tested	12/15/23		
Tester	MHUS		
Recorded	12/15/23		
<b>Lot #</b>	3121260		
<b>Made</b>	12/15/23		

This is to certify that the product listed above has been prepared according to the agreed upon formulation. The solutions producer has a Quality Management System which governs each step of the manufacturing process to insure the production of a consistent product. Traceability from the producer's lot numbers to the original manufacturer's lot number is maintained. Certificates of Analysis for the raw materials used to prepare this product are available upon request.

The weights and/or volumes used to prepare this product are N.I.S.T. Traceable. All balances used in the preparation of product are calibrated daily against N.I.S.T. Traceable weights. The balances are maintained and serviced on a regular basis by an outside certified company. All volumetric glassware used is N.I.S.T. Traceable and certified as meeting Class A specifications.



Aqua Solutions, Inc.  
Ph: 281-479-2569  
Fax: 281-479-2790  
P.O. Box 70  
Deer Park, TX 77536  
Website: [www.aquasolutions.org](http://www.aquasolutions.org)

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Unless otherwise agreed to, all chemicals used in the preparation of this product are Reagent ACS grade.

**Quality Manager**